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1956

# UNIVERSITY OF ILLINOIS

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TUDENT

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NGINEERING

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XHIBIT



FRIDAY  
MARCH 9  
10 AM - 10 PM

SATURDAY  
MARCH 10  
10 AM - 5 PM

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UNIVERSITY OF ILLINOIS





# WELCOME TO OPEN HOUSE!

Greetings from all of us in the College of Engineering! Each year we enjoy this opportunity to show you what students in engineering do, and give you some insight into how they are educated.

Today, of course, you are seeing the "lighter" side of professional education; the planning and execution of these displays represent major additions to a serious study load. For their efforts we are indebted to the Student Coordinating Committee, the Student Societies, Departmental Advisors, and other Faculty members who have given full support.

We hope you will find the results of their labors both instructive and interesting. We trust, too, that they will help you recognize some of the fascination we engineers find in our work, and appreciate a few of the many public services and responsibilities the engineering profession is undertaking for the world of today and tomorrow.

Especially we would like you to see the breadth and diversity of our resources here, and the hundreds of projects we are pursuing for the benefit of our State and Nation. You are welcome visitors, both as friends of engineering and as citizens of Illinois. We wish you a pleasant, informative, and profitable stay!

Sincerely,

W. L. EVERITT  
Dean

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**TIME OF OPERATION** — The Open House will be in operation from 10 a.m. to 10 p.m., Friday, March 9, and from 10 a.m. to 5 p.m., Saturday, March 10.

**INFORMATION** — The Headquarters for Engineering Open House is on the first floor of Civil Engineering Hall. Do not hesitate to ask questions at any of the exhibits along the way.

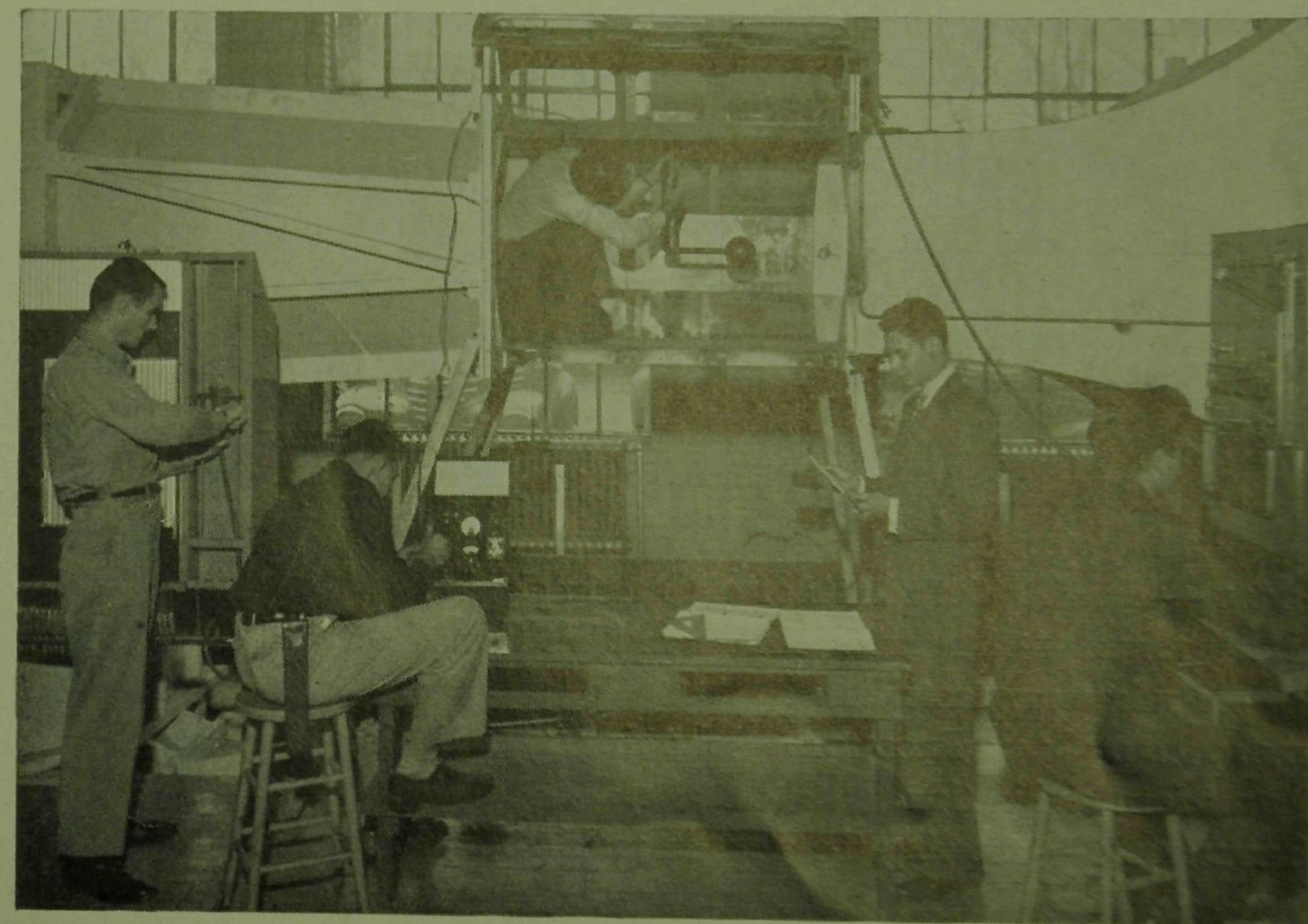
**LUNCH STANDS** — Hamburgers, hot dogs, sandwiches, cold drinks, coffee, and ice cream will be the order of the day at lunch stands located in the Mechanical Engineering Laboratory and in 138 Electrical Engineering Building.

**PARKING** — Parking lot information and Visitor Parking Permits will be available at Open House headquarters on the first floor of Civil Engineering Hall.

## AERONAUTICAL ENGINEERING

Aeronautical Engineering Lab. A.

WIND TUNNEL TEST — will be operated every half hour



Aeronautical Engineering students conducting a wind tunnel test

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## Aeronautical Engineering Lab. B.

SHOCK TUBE — Schlieren photographs of pressure distribution  
STRUCTURAL FRAMEWORK — of an aircraft  
LANDING GEAR DROP-TESTING DEVICE  
TURBOJET ENGINE — J-35 used in F-84G fighter interceptor  
ROCKET ENGINE MODEL — the Walther engine from World War II  
RECIPROCATING ENGINE — R-2850  
MOVIES — at the rear of the building, color films of the latest developments in aeronautical engineering

## AGRICULTURAL ENGINEERING

### Southwest Section of Mechanical Engineering Laboratory

A CENTURY OF PROGRESS — in harvesting and tillage equipment  
FARM MACHINERY  
MODEL SILO — demonstrating mechanical labor saving device  
ELECTRIC LIGHTING AND HEATING  
ELECTRIC FEED MIXER  
POLE TYPE SHED — low cost shed for general use  
WIND TUNNEL — showing building stresses during wind storms  
GRAIN STORAGE BUILDINGS — showing grain storage facilities  
SPRINKLER UNIT — in operation, material on related irrigation systems  
STRUCTURES — models of structures found on Illinois farms

## CERAMIC ENGINEERING

### Ceramics Building

ABRASIVES — depicting the processes involved in combining the abrasive and bonding material to form abrasive wheels, belts and discs  
PORCELAIN ENAMELS — illustrating the versatility and uses of porcelain enamels including demonstrations of how the glassy enamel is applied to steel  
GLASS — showing the results of glass technologists  
REFRACTORIES — illustrating linings in blast furnaces, together with sample refractory materials  
STRUCTURAL CLAY PRODUCTS — showing typical clay products of our modern civilization  
WHITEWARES — showing the steps in making dinnerware

## CHEMICAL ENGINEERING

### Chemical Engineering Building

SYNTHETIC TEXTILE MANUFACTURE — first floor pilot laboratory  
SYNTHETIC RUBBER MANUFACTURE  
PRODUCTION OF DRINKING WATER FROM SEA WATER  
ELECTRO-CHEMISTRY — electroplating  
STUDENT RESEARCH PROJECTS — senior research laboratory  
UNIT OPERATIONS LABORATORY  
CHEMICAL MAGIC — a chemical magic show which uses the unusual properties of materials to produce mystifying effects

## CIVIL ENGINEERING

### Civil Engineering Hall

PICTURES OF THE SEVEN GREATEST CIVIL ENGINEERING PROJECTS OF THE 20TH CENTURY — as determined by the ASCE  
WEIGHT MEASUREMENT DEVICE — by deflection of a beam  
BRIDGE MODELS  
MODEL CONSTRUCTION SITE  
WATER TREATMENT PLANT — in operation  
FLUORIDATION OF PUBLIC WATER  
TRAFFIC INTERCHANGE MODELS  
EQUIPMENT USED ON FIELD SURVEYS  
MODEL CULVERT — showing design techniques  
MOVIES — of Civil Engineering projects under construction

## ELECTRICAL ENGINEERING

### Electrical Engineering Building

SERVOMECHANISMS  
HI-FIDELITY SOUND REPRODUCTION  
TRANSISTORS — shown operation various electronic circuits  
HOUSEHOLD WIRING  
RADAR  
SONAR  
MICROWAVE RADIO RELAY  
SPECIAL LIGHTING EFFECTS — including "black," in the illumination engineering laboratory  
ELECTRONIC LOCOMOTIVE — remote control





*Students performing motor-generator tests in the main undergraduate electrical machinery laboratory. More than thirty groups can conduct experiments simultaneously, and the power generated can be transmitted to any classroom or laboratory in the Electrical Engineering Building*

#### Electrical Engineering Building (continued)

ELECTRONIC DUCK — with its own electronic brain

MAGNETIC CANNON — with a range of thirty feet

WPGU — radio station in operation

#### GENERAL ENGINEERING

##### Transportation Building

PRODUCTION ILLUSTRATION — airbrush and double tone demonstrations

DESCRIPTIVE GEOMETRY

MACHINE DRAWING

ARCHITECTURAL DRAWING

GEOLOGICAL DRAWING — displays of geological maps of the state of Illinois

AIRCRAFT DRAFTING AND LOFTING

GRAPHICAL COMPUTATIONS — a display of more than fifty different slide rules

PERSPECTIVE DRAWING

DEMONSTRATIONS — of lettering machines, reproduction of drawings, pantograph, glass-easel, ellipse machine and displays of drawings on glass, plastic and metals

#### INDUSTRIAL ENGINEERING

##### Mechanical Engineering Building

TOOL DESIGN — displays of equipment used in tool design and the importance of tool design

TIME AND MOTION STUDY — time study equipment and an audience participation time and motion problem

INDUSTRIAL SAFETY

PLANT LAYOUT AND MATERIALS HANDLING — displays of ideal plant layout and method of handling materials

#### MATHEMATICS

##### Electrical Engineering Building (First floor)

Here the Mathematics Department will have displays and demonstrations showing mathematics as it applies to engineering

#### MECHANICAL ENGINEERING

##### Mechanical Engineering Building

MACHINES — demonstration of operations with special machines in the Machine Tool Laboratory

INDUCTION HEATING — and treating of metals in heat treatment laboratory, Room 114

WELDING — arc welding, gas welding and flame cutting, Room 221

ENGINES — standard automotive gas and diesel engines will be in operation in the Internal Combustion Engines Laboratory

HEAT TRANSFER STUDY — in the Thermodynamic Laboratory

ELEMENTS OF MACHINERY — in Machine Design Room

##### Mechanical Engineering Laboratory

POWER MACHINERY — Murry Corliss Steam Engine, Otto Gas Engine, Allis Chalmers Steam Engine, and many diesel engines

TURBINES — Terry seven-stage steam turbine

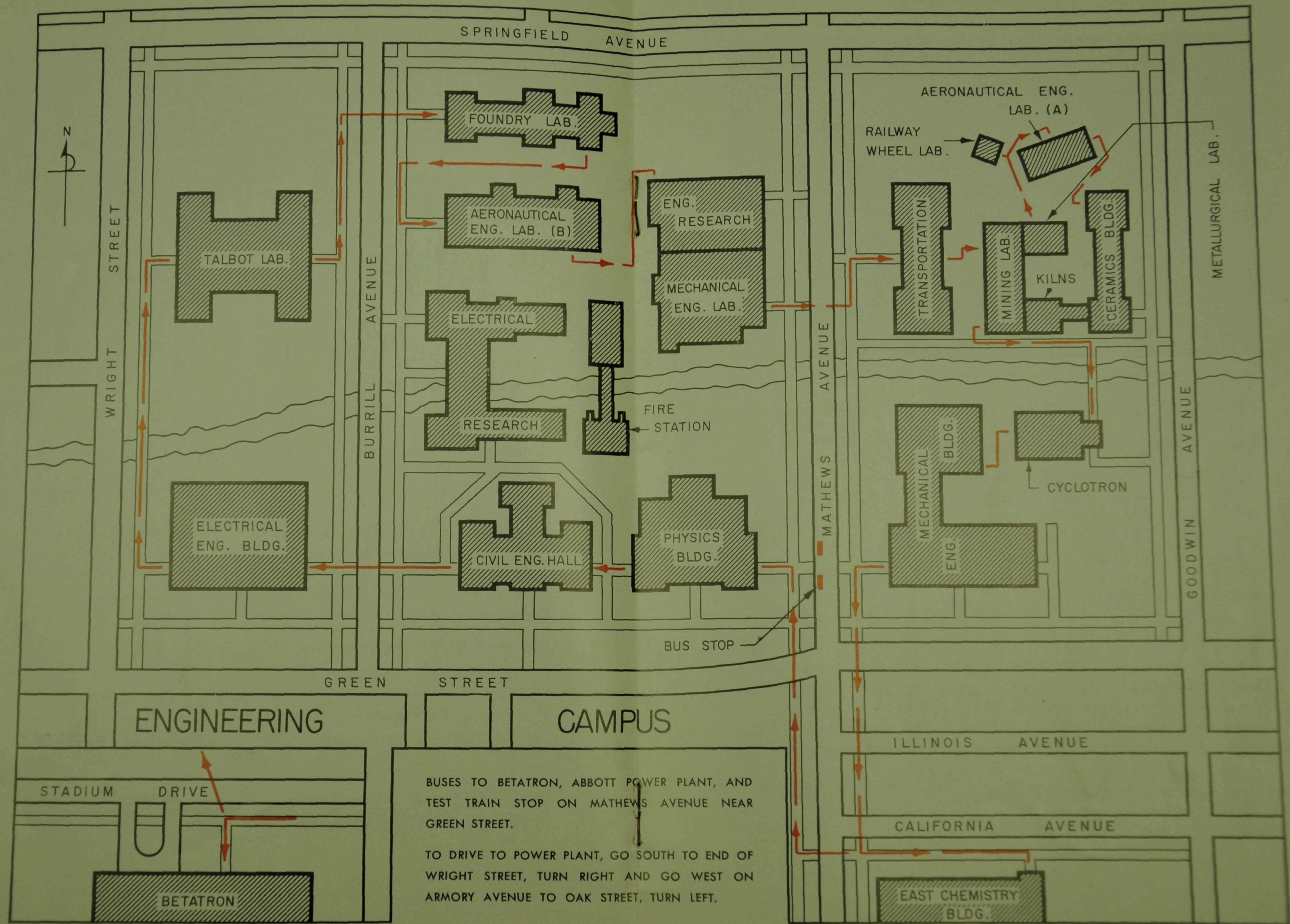
HIGH ALTITUDE TEST CHAMBER — Physical Environment Laboratory

##### Foundry

SAND TESTING — core making, drying and sand blasting

CASTING — on the main floor see demonstrations of casting and foundry methods









*Heat Treatment of Metals Laboratory in the Mechanical Engineering Building*

## **METALLURGICAL ENGINEERING**

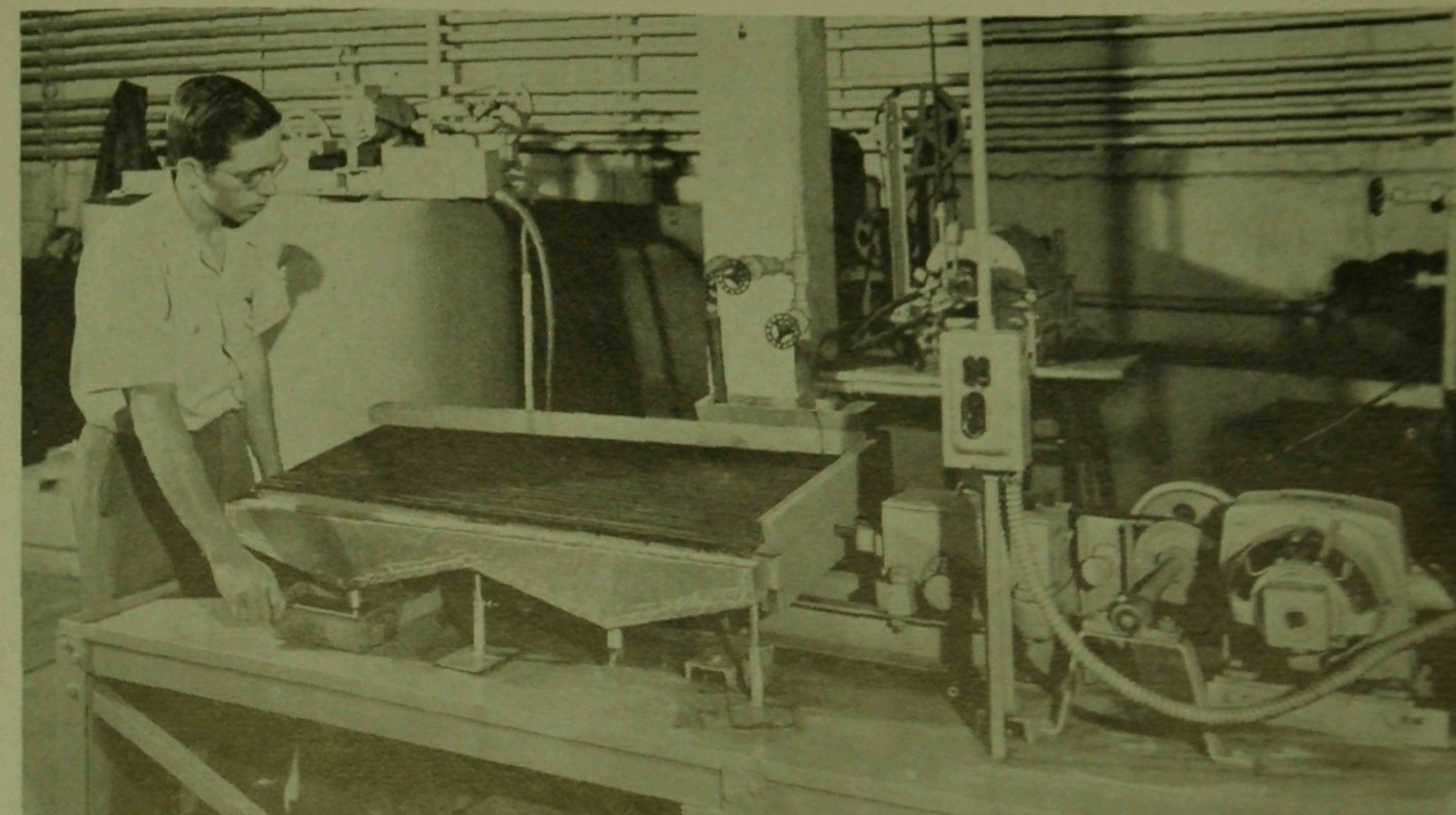
### **Metallurgical Engineering Laboratory**

PRODUCTION OF METALS — and methods of handling ores  
 MICROSTRUCTURE — and the actual sound of metals crying  
 RESEARCH AND DEVELOPMENT — research work in progress  
 ELECTRON MICROSCOPE — X-ray diffraction methods  
 MOVIES — of metallurgical developments and operations

## **MINING ENGINEERING**

### **Mining Laboratory**

PROSPECTING — equipment for prospecting for radio-active ores  
 DIAMOND DRILLING  
 FUELS — coal, petroleum, etc., will be on display  
 ORES — iron, copper, lead, etc., will be on display  
 MINING EQUIPMENT AND METHODS — crushing and dressing methods  
 and demonstrations of production processes  
 SAFETY — mine ventilation and safety apparatus will be on display  
 MOVIES — of mining operations



*Student demonstrating a Wilfley table used to separate ores for further processing*

## **ENGINEERING PHYSICS**

### **Physics Laboratory**

LIGHT — demonstrations of the fundamental properties of light  
 HEAT — special low temperature display  
 MECHANICS — demonstration of the meaning of forces and masses  
 ELECTRONICS — high voltage displays  
 CYCLOTRON — demonstration  
 BETATRON — demonstration

## **RESERVE OFFICER'S TRAINING CORPS**

### **Army — Mechanical Engineering Building**

BRIDGING — Corps of Engineers will show types of fixed and floating  
 bridges, and engineering construction equipment  
 COMMUNICATION — Signal Corps will display and demonstrate military  
 communication systems  
 MARS — messages will be taken from visitors and sent free of charge  
 to any member of the Armed Forces anywhere in the world

### **Navy — Civil Engineering Hall**

WEAPONS — naval ammunition and weapons on display





3,000,000 lb hydraulic testing machine breaking a large concrete cylinder. This machine, located in the main crane bay of Talbot Laboratory, will be demonstrated on the following schedule:  
 Friday, March 9 — 10:30, 11:30 a.m.; 1:30, 2:30, 3:30, 4:30, 7:30, 8:30, and 9:30 p.m.  
 Saturday, March 10 — 10:30, 11:30 a.m.; 1:30, 2:30, 3:30, and 4:30 p.m.

#### Navy R.O.T.C. (continued)

ENGINEERING — diving apparatus and the Waterberry Speedgear  
 SHIP MODELS

Air Force

JET ENGINE

CONTROL TOWER OPERATIONS

FLIGHT INSTRUMENTS

AIRCRAFT MODELS DISPLAY

#### THEORETICAL AND APPLIED MECHANICS

Talbot Laboratory

TESTING MACHINES — repeated load tests, 300,000 in.-lb torsion machine, dead load testing machine, tests on rigid frames, tests on welded wire fabric in concrete, etc., in the main bay of the first floor

THREE-MILLION LB TESTING MACHINE — in operation, breaking a large concrete cylinder

HYDRAULIC JUMP — in the glass walled flume of the Fluid Mechanics Laboratory

WEIRS — and other hydraulic machinery, Rooms 126 and 129

WATER TURBINE — and water tunnel

RAIL AND JOINT BAR TESTING — rolling machines in operation

VIBRATIONS — the study and measurement of small motions, Room 220

MATERIALS TESTING — demonstrations of standard student experiments in Room 225

FATIGUE LOADING — machines and instruments for testing metals under repeated loads at elevated and sub-zero temperatures

MOVIES — of student activities in theoretical and applied mechanics



## OTHER ATTRACTIONS YOU CAN'T MISS

**Abbott Power Plant** — The power plant of the University will be open for inspection. Here you will see power-generating machinery under operating conditions.

**Physics Research Building** — This building houses the Betatron. There will be guided tours with explanations of this famed research device.

**Engineering Research Laboratory** — The Illiac is housed in this building. The Illiac is one of the few electronic digital computers of its size in the United States.

**Test Train Exhibit** — The Illinois Central Railroad will have on display their dynamometer test car, rail test car and the current type of diesel engine in operation. The test train will be located on the railroad tracks near Abbott Power Plant.

## ST. PAT'S BALL

This year the College of Engineering will again hold the annual St. Pat's Ball, one of the most elaborate of the events on North Campus. St. Pat himself will be present to perform the knighting ceremony. Deserving seniors will have the title "Knight of the Order of St. Pat" bestowed upon them. This semi-formal dance will be held on Saturday, March 10, 9-12 p.m. at Huff Gym. Tickets may be obtained at the Illini Union Box Office.

## . . . AND FINALLY, OUR THANKS

This year's Engineering Open House is the result of much time and effort given by many individuals. We wish to thank them all — the Faculty, the committee chairmen, the departmental representatives, and all of you, our guests, who came to see and, we hope, enjoy our work.

Special thanks to John Aanes for designing our program cover and posters, to Professor John Carroll for his help in organization, and to our constant behind-the-scenes helpers — the Staff of the College of Engineering.

RICHARD DAY, *General Chairman*

## OPEN HOUSE PERSONNEL

CHAIRMAN — Richard Day

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John Aanes, printing (Cover)  
Tom Polek, routing  
Joe Kennell, headquarters

HIGH SCHOOL PUBLICITY  
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### ST. PAT'S BALL

George Haley, Chairman

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